

Stipa comata - Bouteloua gracilis - Carex filifolia Herbaceous Vegetation

COMMON NAME	Needle-and-thread Grass - Blue Grama - Threadleaf Sedge Herbaceous Vegetation
SYNONYM	Needle-and-thread - Blue Grama Mixedgrass Prairie
PHYSIOGNOMIC CLASS	Herbaceous vegetation (V)
PHYSIOGNOMIC SUBCLASS	Perennial graminoid vegetation (V.A)
PHYSIOGNOMIC GROUP	Temperate or subpolar grassland (V.A.5)
PHYSIOGNOMIC SUBGROUP	Natural/semi-natural (V.A.5.N)
FORMATION	Medium-tall sod temperate or subpolar grassland (includes sod or mixed sod-bunch graminoids) (V.A.5.N.c.)
ALLIANCE	<i>Stipa comata - Bouteloua gracilis</i> Herbaceous Alliance
CLASSIFICATION CONFIDENCE LEVEL	2
USFWS WETLAND SYSTEM	Upland

RANGE

Globally

This community is common in Montana, Wyoming, and is in Nebraska, North Dakota, South Dakota, southern Saskatchewan, and southern Manitoba.

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This community is most common on upland sites, especially on Bureau of Land Management lands south and northwest of the NHS. It also occurs in the northwest part of the NHS, and on the upper floodplain in the southwest part.

ENVIRONMENTAL DESCRIPTION

Globally

This community is found on flat to gently sloping sites, predominantly with sandy loam or loam soil. The soil is typically 40-100 cm deep (Hanson and Whitman 1938, Hansen et al. 1984).

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This community occurs on sandy soils on level and rolling sites, and on slopes to 15 degrees. There is no apparent correlation with aspect.

MOST ABUNDANT SPECIES

Globally

Statum

Herbaceous

Species

Stipa comata, *Bouteloua gracilis*, *Carex filifolia*

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DIAGNOSTIC SPECIES

Globally

Stipa comata, *Bouteloua gracilis*, *Carex filifolia*

Fort Laramie National Historic Site

Stipa comata, *Bouteloua gracilis*

VEGETATION DESCRIPTION

Globally

This midgrass prairie community is dominated by graminoids that are usually between 0.5 and 1 m tall. The vegetation cover is moderate. The dominant species are *Bouteloua gracilis*, *Carex filifolia*, and *Stipa comata*. *S. comata* usually has the most coverage of any single species. *Pascopyrum smithii* is constant in this community and can be locally abundant. *Carex duriuscula* is not always present but is also abundant at some sites. Forbs that are typical of this community are *Heterotheca villosa* var. *villosa*, *Guara coccinea*, *Liatris punctata*, and *Phlox hoodii*. Sandier areas often have *Calamovilfa longifolia* present. Shrubs rarely grow taller than the grasses, but *Artemisia frigida* is very common in this community. Other grasses that are likely to be present are *Aristida purpurea* var. *longiseta*, *Koeleria macrantha*, and *Sporobolus cryptandrus*. On 19 stands in west-central Montana the cover by the different strata was as follows: shrubs - 6%, graminoids - 67%, forbs - 11%, bryophytes - 14%, litter - 55%, rock 4%, bare soil - 9% (Mueggler and Stewart 1978). Thilenius et al. (1995) found that the average cover on 14 stands in eastern Wyoming was 42%. Tolstead (1942) described this community as the climax on the level lands of the northern part of Cherry County, Nebraska.

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This community typically is dominated by *Stipa comata* and *Bouteloua gracilis*. The latter is the more dominant species in some areas, as can be *Carex filifolia*. Low shrubs are often present but sparse, the most frequent being *Artemisia filifolia* and *A. frigida*. *Tradescantia occidentalis* and *Opuntia fragilis* frequently occur in this community. The latter is occasionally abundant. *Andropogon hallii* occurs occasionally in small patches. Small patches of *Calamovilfa longifolia* are common. At two sites, very small stands of *Schizachyrium scoparium* were observed on steeper slopes within this type. In some areas, such as old disturbed areas on Bureau of Land Management land northwest of the park (pipeline), large stands of *Calamovilfa longifolia* are present. Herbaceous cover typically ranges from 40 to 75%, with heights typically between 0.5 and 1 m.

OTHER NOTEWORTHY SPECIES Information not available.

CONSERVATION RANK G3G4

RANK JUSTIFICATION

DATABASE CODE Cegl002037

COMMENTS

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This community is very similar to the *Stipa comata* - *Yucca glauca* Herbaceous Vegetation type in composition. However, shrub cover is less than 10% or may be absent. At some sites, especially on the BLM land south of the NHS, *Bouteloua gracilis* is dominant, and *Stipa comata* is rare or absent, probably due to grazing (*S. comata* is known to be a decreaser and *B. gracilis* an increaser in these situations; USDA Forest Service 1937). *Carex filifolia*, also an increaser (Jones 1992), contributes substantial cover in some areas.

REFERENCES

Hansen, P. L., G. R. Hoffman, and A. J. Bjugstad. 1984. The vegetation of Theodore Roosevelt National Park, North Dakota: A habitat type classification. General Technical Report RM-113. USDA Forest Service, Rocky Mountains Forest and Range Experiment Station, Fort Collins, CO. 35 p.

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Mueggler, W. F. and W. L. Stewart. 1978. Grassland and shrubland habitat types of western Montana. USDA Forest Service General Technical Report INT-66. Intermountain Forest and Range Experiment Station, Ogden, UT. 154 pp.

Thilenius, J. F., G. R. Brown, and A. L. Medina. 1995. Vegetation on semi-arid rangelands, Cheyenne River basin, Wyoming. General Technical Report RM-263. USDA Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO. 60 p.

Tolstead, W. L. 1942. Vegetation of the northern part of Cherry County, Nebraska. Ecological Monographs 12(3):256-292.

USDA Forest Service. 1937. Range plant handbook.